Varieties of capitalisms and varieties of performances: accounting for inequality in post-Soviet Union transition economies

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We partition post-Soviet Union Transition Economies into two groups: European Union New Member States and countries belonging to the Commonwealth of Independent States or the South Eastern Europe area. Both groups started the 1980s with low levels of inequality, but in the early 2000s the latter group reached a level of inequality seven percentage points higher. We review various factors of inequality and examine whether these had differential effects in the two groups. Foreign Direct Investments and trade flows with the EU had a bigger inequality-enhancing effect in New Member States. We interpret this as evidence of technological catching-up and productivity improvements taking place in this region. Other specific reforms, such as privatisation and price liberalisation, had similarly strong effects in the two groups. We also find some evidence of an inequality-decreasing effect of an indicator of Voice and Accountability in countries outside the EU, and that countries with higher government effectiveness experienced lower levels of inequality. This supports the relevance of institutional capacity in tackling inequality. Finally, we speculate over the effects of the current global crisis on future economic performance.

Keywords: inequality; transition economies; varieties of capitalism

JEL Classification: D63, F16, O33

1. Introduction

The objective of the paper is to examine empirically the vastly different performances in terms of income inequality of the economies that emerged from the break-up of the Soviet Union. We contrast the experience of the ten countries that joined the European Union since 2004 – so called new member states (NMS) – to that of countries that are part of the Commonwealth of Independent States (CIS) and those South Eastern European (SEE) countries where the process of accession to the EU is still at a preliminary stage.

All these countries had roughly similar economic and social conditions at the beginning of the transition, but embraced very different systems of governance ever since. Drawing on the variety of capitalism approach (Coates 2000; Hall and Soskice 2001; Amable 2003) it is possible to aggregate these Transition Economies (TE) into groups according to the type of institutions that have emerged. Lane (2007)

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distinguishes among 'consolidated market economies', 'hybrid economies' and 'statist market economies'. The former consist of the NMS bloc and identifies countries that have come closest to the continental European model of capitalism, i.e. one characterised by strong expansion of the private sector within a context of robust institutional control by the state. The conditionality imposed by the EU for the accession has obviously proven relevant in shaping the path followed by these economies.[1]

The latter two groups include former Soviet Union countries that have now joined the CIS,[2] and post-Yugoslavia Republics whose process of integration with the EU is still at a preliminary stage.[3] The main difference with the NMS bloc is due to the role and the presence of the state in the economy. In hybrid economies, the regulatory capacity of the state appears to be much more limited than in consolidated market economies. Hybrid economies have been defined as 'uncoordinated' forms of capitalism (Lane 2007), or – in the case of Georgia – as forms of 'organized chaos' (Christophe 2007). They have taken on forms of deregulation of their markets that make them very close to the liberal market economies like those of the Anglo-Saxon countries. In fact, Knell and Srholec (2007) classify economies such as the Russian, the Lithuanian, and the Ukrainian, as even exceeding the US economy in terms of market liberalisation and deregulation. At the same time, these countries maintain a dominant presence of the state as an economic actor. This mainly boils down to the ownership and control of some specific industries, particularly those linked to the extractive sectors.

A third category proposed by Lane includes countries such as Belarus, Turkmenistan and Uzbekistan, which cannot be thought of as having set off a model of market-based capitalism. The state maintains a dominant role in the administration of economic activities, and private ownership is relatively limited. Consequently, the rule of law is higher in these countries than in the former group – a factor that, as suggested by Popov (2006), is key for economic performance. Since the only country in this group for which statistics are available is Belarus, we have collapsed this group with the former. This will be referred to as the CIS&SEE group.

Although individual specificities remain behind this classification, there are grounds to believe that such a distinction is meaningful. Figure 1 reports the average level of a composite index of reform developed by the European Bank for Reconstruction of Development (EBRD). This index gauges the level of advancement in reforms of a country across several dimensions, including privatisation, trade openness, and liberalisation in both banking and non-banking financial sectors (see Figure 1 notes). The diagram clearly indicates that NMS reformed more and more promptly after the 1990s than the CIS&SEE. This is also true across each individual dimension on which the index is computed (not reported). Arguably, this is partly a consequence of the conditionality imposed by EU accession and of the political willingness of these countries to adopt more comprehensive reforms than the other countries. Additionally, though, it can also be seen as a sign of a greater social consensus over the reform paths (Barlow and Radulescu 2005).

Figure 2 reports the evolution over time of an indicator of Government Effectiveness (GE henceforth) developed by the World Bank. The indicator aims to measure 'the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.' (Kaufmann et al. 2007, 3). The presence and persistence over time of a large gap
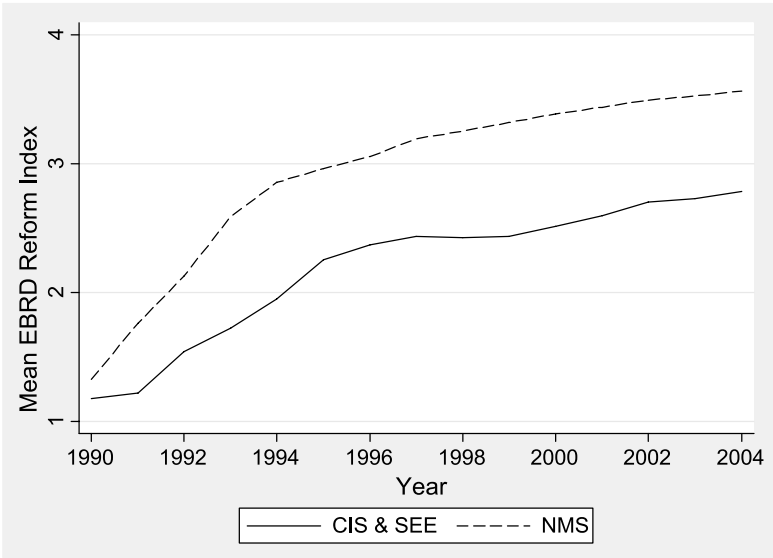
Figure 1.   Average level for the EBRD aggregate reform index per group of countries.
Sources: European Bank for Reconstruction and Development.
Notes: The index has been calculated as the arithmetic mean of the nine indexes produced by the EBRD. These are: Trade, Small Scale Privatisation, Large Scale Privatisation, Price Liberalisation, Banking Financial Sector, Non-Banking Financial Sector, Infrastructure, Competition Policy, Enterprise Reform.
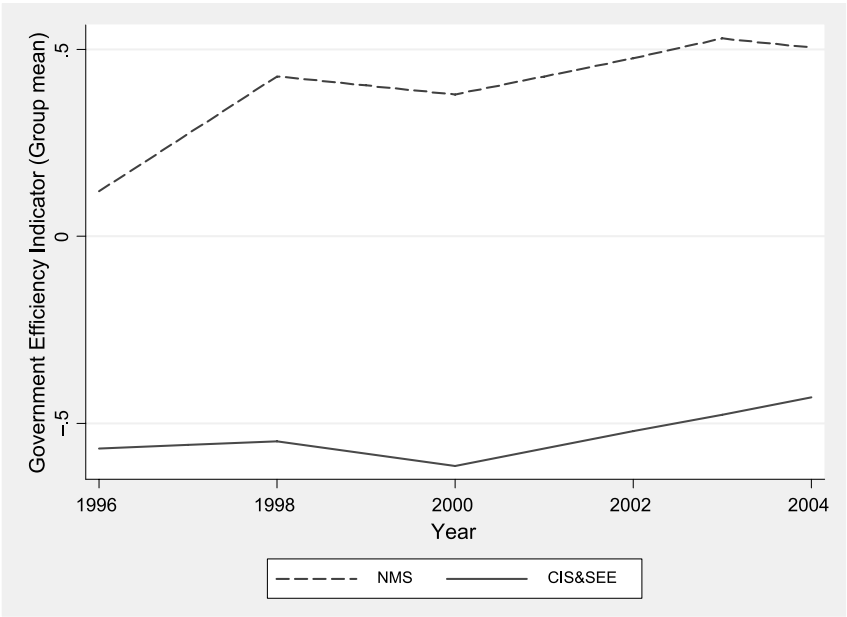
Figure 2.   Evolution of government efficiency indicator (group mean).
Source: World Bank (2006).

between NMS and CIS&SEE is evident. CIS&SEE show an improvement over the 2000s, but the gap is still large in 2004. Other indexes of institutional performance, such as the Control Corruption indicator, show similar patterns. Hence, not only did NMS reform more, but also their governments seemed to achieve better performances.

The two groups also differ with respect to their economic performance. Figure 3 reports the average growth rate of GDP and of the Gini index[4] over the period 1990–2004. The spell on which the Gini index has been calculated is generally shorter because of a lack of a complete time series for most countries. On average, the Gini index spans 8.2 years. Figure 3 should therefore be interpreted with extreme caution. All the same, the differences that emerge among groups of countries are quite striking. The only countries that in 2004 still lagged behind the 1990 GDP level are all from the CIS&SEE region. Although exceptions do exist,[5] economies that managed steady growth rates with low inequality rises are essentially NMS.[6]

Figure 4 examines the evolution of the Gini index over time, taking the average value of the index among the two groups of countries. Both groups started the 1980s with extremely low levels of inequality, with the Gini index being on average below 30% for NMS and below 25% for CIS&SEE. The indexes remained below 30% for all the 1990s and then increased dramatically afterwards. Inequality seems later to have stabilised at around 33% for NMS. This is in line with the mean Gini index for the European Union, which Eurostat estimates at a level of 31% in 2005.[7] The path has been more erratic for CIS&SEE. It is worth noting that most of the increase in

Figure 3.   Mean percentage growth rates of GDP and Gini index per country.
Sources: World Development Indicators for GDP (World Bank, 2006). WIDER-WIID & EHII for Gini index (see section 0).
Notes: GDP is expressed in PPP. The period is 1990-2004 apart from Serbia and Montenegro (1993-2004). See Table 1 for the period in which the Gini index has been calculated. Circle (square) markers denote CIS&SEE (NMS) countries.

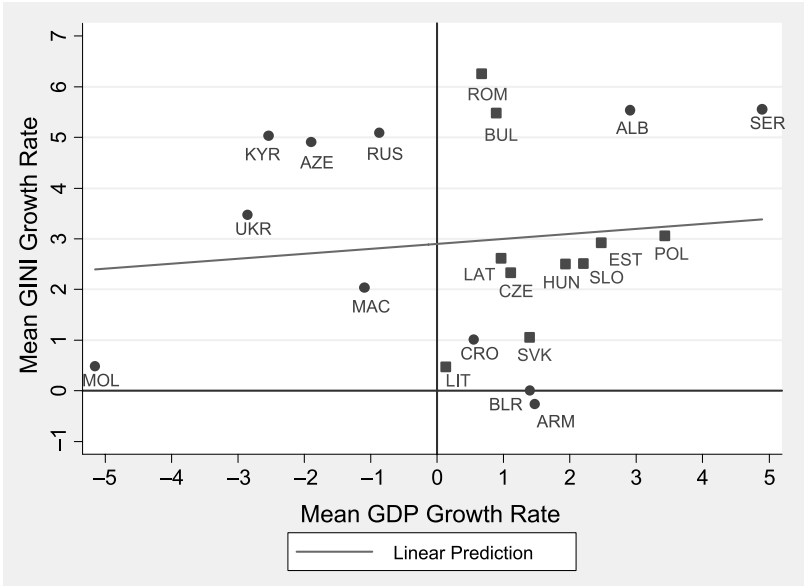inequality occurred in the early 1990s. This was followed by a sharp decrease in inequality in the late 1990s, followed subsequently by another increase. This resulted in CIS&SEE ending up with a level of inequality higher by a factor of around 7 percentage points than that of NMS. Although severe lack of data at the country level makes the interpretation of the data before the 1990 very difficult, the view that NMS experienced a less painful transition in terms of income inequality than CIS&SEE seems to be supported by this graph.

In either group, economies appear to have switched to a persistently higher level of inequality in comparison to pre-transition values. Overall, no 'Kuznets reversal' seems to have emerged thus far (see also Section 2.1). This general picture is confirmed by looking at the evolution of inequality for individual countries, as done in Barlow et al. (2009, Figure 5) (BGM henceforth). With the only exception of Armenia, Albania, Belarus – where an inverse-U pattern akin to a Kuznets curve appears – and Lithuania, all other countries exhibit a fairly similar pattern of a steep rise in inequality over the transition, although the speed of the change may differ.

The two groups also differ with regard to another important dimension, that is, the level of external debt accumulated by the private and public sectors. Figure 5 reports the most recent statistics available for this measure. The graph clearly shows that NMS (listed in alphabetical order in the right-hand side of the diagram) have significantly higher levels of external debt than CIS&SEE. The average across the two groups is 85% for NMS and less than 50% for CIS&SEE (EBRD 2008). Although easier access to international capital may have been functional to a higher level of growth, this also clearly exposes NMS to the risks of global financial crises. The IMF estimates the European TE to have the lowest probability of exit from crisis owing to the high ratio of external debt to GDP (IMF 2009). Although the level of external debt is not directly significant in accounting for inequality in the period under consideration – which ends in 2004 – we shall treat this variable as key when trying to extend the results of our analysis to the future.

We shall base our analysis on the distinction between these two groups with the aim of exploring their different economic performances and the underlying mechanisms. Most works have focused on economic growth as an indicator of economic performance (see, for example, Godoy and Stiglitz 2006; Sukiassian 2007). We shall instead take income inequality as our 'explanandum'. The present paper takes an approach similar to BGM – which considered the region of post-Soviet Union countries as a whole – but focuses on the differential performance between the two groups of countries examined above. On the basis of our analysis, we shall also speculate on whether and how the current global financial crisis will affect these two groups.

The paper is organised as follows. Section 2 illustrates the empirical approach. Section 3 reports the results, and Section 4 concludes and speculates on the impact of the current global economic crisis on these economies.

2.   The empirical model

2.1.   *The estimating equation*

Our empirical model aims at identifying the impact of different possible factors of inequality on within-country income inequality in different groups of countries. The
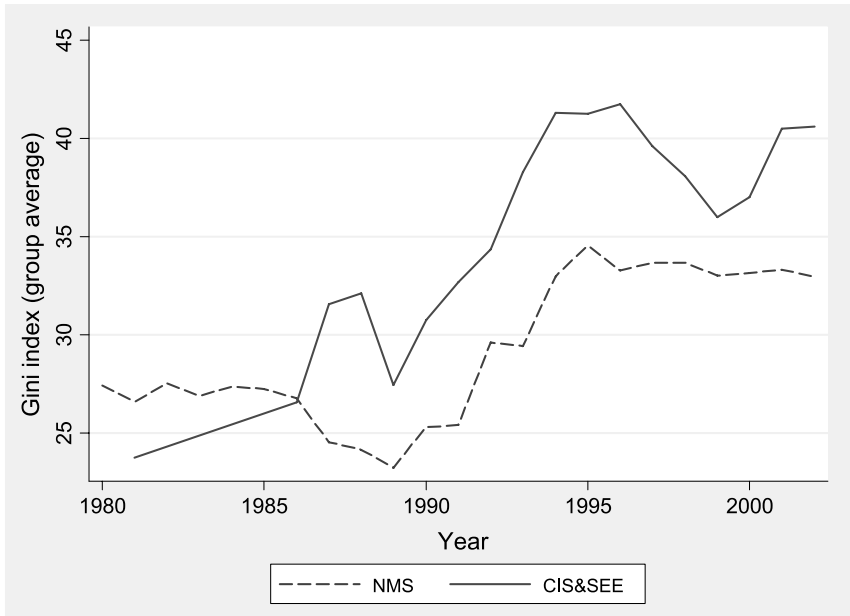
Figure 4.   Average level of Gini index per group of countries.
Sources: WIDER-WIID & EHII for Gini index (see section 0). Missing data have been inter-
polated.
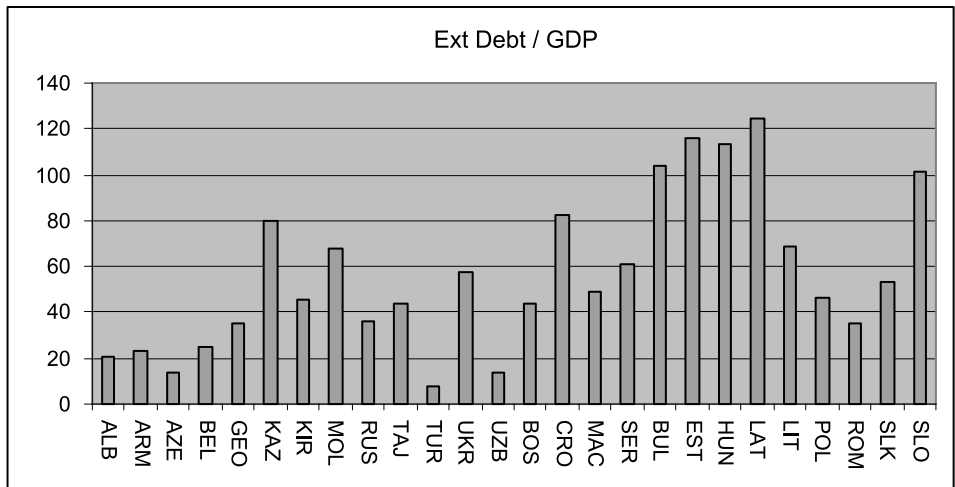
Figure 5.   External debt/GDP in 2008 (or most recent year).
Source: EBRD (2008).

econometric specification is based on and significantly extends the vast literature
that has focused on the relationship between trade openness and income distribution
using aggregate cross country databases (see Vivarelli, 2004 for a review of this
literature).

    The most general form of the econometric specification is given in equation (1):

$$GINI_{it} = \alpha_i + \beta Z_{i,t-1} + (\beta_{Z*NMS} Z_{i,t-1} * NMS) + \sum_k \gamma_k X_{itk} + t + \varepsilon_{it} \qquad (1)$$

where i and t denote country and time period;[8] GINI is the Gini Index; Z is a possible factor of inequality, which could either be a globalisation variable, i.e. imports, exports, or FDI, expressed as a share of GDP, or an institutional reform variable, e.g. price liberalisation, privatisation, or a state's index of Voice and Accountability (V&A). All these regressors take on a value lagged by one year to address possible problems of co-causation and endogeneity. $\beta_{Z*NMS} Z_{i,t-1} * NMS$ is an interaction term between the variable Z and the group of NMS that enables us to capture the differential effects of Z across the two group of countries. X_k is a set of control variables, namely GDP per capita and Inflation. GDP captures the hypothesis that the dynamics of within-country income inequality can be affected by an economy's stage of development. The inclusion of a quadratic term would be necessary to test the presence of non-linearities, as theorised by Kuznets (1955). However, our analysis shows no statistical significance for the quadratic term, thus not supporting the existence of a Kuznets dynamic. This is consistent with Sukiassyan (2007), who finds no evidence supporting a Kuznets dynamics in TE.[9] The analyses reported in this paper thus omit this term. Inflation controls for the period of high macroeconomic instability that many TE encountered.

t is a trend term. Its introduction is a robustness check for the existence of an actual causal relationship between the Gini index and a variable Z. In fact, a statistically significant correlation may result because of *GINI* and Z having a common upward trend. A β coefficient for a certain variable Z being statistically significant even after introducing the year trend may thus be interpreted as not disproving the hypothesis that Z is a causal factor for *GINI*. Conversely, β dropping out of the significance region after t entering the regression will be interpreted as evidence against such hypothesis.

α_i is the idiosyncratic individual and time-invariant country's fixed effect whereas ε_{it} is a standard error term. All variables that are not already expressed as indexes on a bounded interval are expressed in natural logarithms. Finally, standard errors are robust to heteroskedasticity using the Huber–White correction. Since we are mainly interested in the within-country dimension of inequality, we use a Least Square Dummy Variable (LSDV) estimator, which relies on the variability of data within a country.[10] Therefore, the influence of the various independent variables has to be understood as taking place over time within a country, rather than across countries. The use of an LSDV estimator allows us to wipe out all time-invariant country-specific characteristics that are likely to affect the inequality patterns. However, in Section 3.3 we omit the country dummies in order to study the relevance of institutional variables at the cross-country level.

The series used in the regressions have been tested for unit root using the test developed by Maddala and Wu (1999).[11] The hypothesis of non-stationarity of the series is rejected at the 1% level (see BGM for more details).

2.2. *Dataset description*

Data for inequality come from the WIDER-WIID[12] (World Institute for Development Economics Research 2007) and the Estimated Household Income Inequality (Galbraith and Kum 2003) datasets. All observations for the Gini index within each country come from the same source and the same measurement, which makes this

measure fully comparable across time within each country. We have also sought to ensure the greatest possible comparability of data across countries by selecting Gini indices calculated on gross earnings inequality for all but two countries.[13] In any case, the use of the LSDV estimator prevents the econometric results from being biased by different measurements methods or data sources being used in different countries. Table 1 reports descriptive statistics for each country, and the data source being used. Data on international trade (import and export) and data on GDP are gathered from the World Development Indicators (WDI) (World Bank 2006). In order to identify trade patterns with the EU and Developing Countries (DCs) separately, we also use the IMF Direction of Trade Statistics database (2006). Data on the institutional and economic policy variables are taken from the European Bank for Reconstruction and Development (EBRD) dataset. Data for the V&A indicator come from the World Bank Governance Indicators (Kaufmann et al. 2002). Summary statistics of the data included in the regressions are presented in Table 2.

Table 1.   Sources for Gini indexes.

Country	Mean	Std. Dev.	Max	Min	Initial year	Final year	Source
Albania	44.68	9.82	57.93	30.69	1990	1997	EHII
Armenia	52.91	4.99	57.18	47.26	1994	1998	EHII
Azerbaijan	40.88	3.29	45.68	37.71	1990	1994	EHII
Belarus	35.30	1.95	40.00	34.00	1992	2002	WIDER
Bulgaria	38.02	4.97	43.34	27.34	1990	1998	EHII
Croatia	34.41	2.54	37.10	30.05	1990	1996	EHII
Czech Republic	25.58	2.16	28.20	21.20	1991	2002	WIDER
Estonia	36.76	1.44	38.90	35.30	1997	2002	WIDER
Hungary	37.29	3.00	40.01	31.57	1990	1999	EHII
Kyrgyz Republic	43.82	5.55	51.00	30.00	1992	2002	WIDER
Latvia	32.26	2.90	34.90	24.70	1991	1994	WIDER
Lithuania	36.98	1.64	39.00	34.50	1992	2002	WIDER
Macedonia	26.38	1.94	29.00	22.00	1990	2002	WIDER
Moldova	41.10	2.28	44.00	38.00	1992	2002	WIDER
Poland	31.76	2.95	35.30	26.50	1992	1999	WIDER
Romania	32.55	6.90	41.00	20.00	1991	2002	WIDER
Russian Federation	42.56	8.53	52.00	27.00	1990	2002	WIDER
Serbia and Montenegro	32.00	5.10	38.00	27.00	1997	2002	WIDER
Slovak Republic	23.57	3.55	26.70	18.00	1990	2002	WIDER
Slovenia	29.25	3.16	35.80	22.80	1990	2002	WIDER
Ukraine	36.80	4.75	42.36	29.88	1990	1998	EHII

Notes: The EHII is a collection of measures of *Estimated Household Income Inequality* and is built combining the information in the Deninger and Squire (D&S) data with the information in the UTIP-UNIDO data. In the D&S data on Gini coefficients refer to a variety of different income and population definitions. The EHII is built following a two-step procedure. First, the D&S measure of inequality (in Gini coefficients) is regressed on the UTIP-UNIDO measures of income dispersion in manufacturing sector, and on a matrix of conditioning variables including dummies for the three types of data source (income/expenditure, household/per capita, gross/net). Then EHII is computed using the same exogenous variables, where the intercept and coefficients are the deterministic parts extracted from the first-step estimation. See Galbraith and Kum (2003) for a detailed explanation of this procedure.

Table 2. Descriptive statistics for variables used in the analysis.

Variables	Obs.	Mean	Std. Dev.	Min	Max
Gini index	182	35.20	7.73	20.00	57.93
FDI (%GDP)	293	3.28	4.54	−0.17	46.02
FDI (%GDP) – NMS	142	3.57	3.09	0.00	16.89
FDI (%GDP) – CIS&SEE	151	3.01	5.57	−0.17	46.02
EXPORT (%GDP)	304	44.29	17.39	7.22	90.76
EXPORT (%GDP) – NMS	148	49.93	17.02	16.73	90.76
EXPORT (%GDP) – CIS&SEE	156	38.94	16.05	7.22	89.41
EXPORT EU/US	262	0.46	0.22	0.00	1.07
EXPORT EU/US – NMS	131	0.58	0.18	0.20	1.07
EXPORT EU/US – CIS&SEE	131	0.33	0.17	0.00	0.91
IMPORT (%GDP)	304	51.42	16.97	12.99	93.27
IMPORT (%GDP) – NMS	148	53.34	17.32	19.93	92.01
IMPORT (%GDP) – CIS&SEE	156	49.59	16.48	12.99	93.27
IMPORT EU/US	261	0.51	0.25	0.01	1.43
IMPORT EU/US – NMS	131	0.64	0.16	0.15	1.09
IMPORT EU/US – CIS&SEE	130	0.38	0.25	0.01	1.43
PRICE LIB. EBRD INDEX	315	3.67	0.90	1.00	4.30
PRICE LIB. EBRD INDEX – NMS	150	3.92	0.70	1.00	4.30
PRICE LIB. EBRD INDEX – CIS&SEE	165	3.44	0.10	1.00	4.30
SMALL SCALE PRIV. EBRD INDEX	315	3.28	1.09	1.00	4.30
SMALL SCALE PRIV. EBRD INDEX – NMS	150	3.60	1.05	1.00	4.30
SMALL SCALE PRIV. EBRD INDEX – CIS&SEE	165	3.02	1.06	1.00	4.30
PRIVATE SHARE OF VALUE ADDED	305	49.64	22.64	5.00	80.00
PRIVATE SHARE OF VALUE ADDED – NMS	150	56.67	21.38	10.00	80.00
PRIVATE SHARE OF VALUE ADDED – CIS&SEE	155	42.84	21.78	5.00	75.00
VOICE & ACCOUNTABILITY INDEX	126	0.06	0.86	−1.49	1.25
VOICE & ACCOUNTABILITY INDEX – NMS	60	0.70	0.71	−1.49	1.25
VOICE & ACCOUNTABILITY INDEX CIS&SEE	66	−0.52	0.48	−1.49	0.67
GOVERNMENT EFFECTIVENESS INDICATOR	315	−0.95	0.65	−0.100	0.87
INFLATION	274	3.24	1.85	−2.92	8.32
GDP PER CAPITA	294	7166	4077	1220	19244

3. Results

3.1. *Globalisation and inequality*

Trade liberalisation has been an integral part of the transition process. While during the Soviet period the trade patterns were heavily managed by the state, most of the countries in the region have now adopted liberal trade policies. However, significant differences in the degree of openness remain, both between the two groups (see Figure 1) and within each group (see BGM for a review). BGM reports diagrams depicting the evolution of trade and FDI for the two groups of countries. They show NMS having a higher share of trade than CIS&SEE and comparable levels of FDI during the 1990s.

The theoretical framework traditionally used by economists as a benchmark to analyse the distributive effects of trade is the Heckscher-Ohlin (HO) model. It postulates patterns of trade and production driven by a country's relative abundance in factor endowments. In its simplest version, the model predicts a less unequal distribution of wages in low and middle-income countries as an effect of trade liberalisation. This follows from the increase in the relative demand and prices for unskilled labour that can be expected from greater openness (see Wood 1994).

In recent years, the HO theoretical framework has been subject to considerable revisions, which lead to opposite implications for the openness-inequality link. An approach has stressed that increased openness may facilitate technology diffusion from the 'North' to the 'South', through import of machineries or 'reverse engineering' (Coe and Helpman 1995, Barba Navaretti and Solaga 2002). As shown in several empirical studies (e.g. Berman and Machin 2004; Berman et al. 1998; Piva and Vivarelli 2002), this is likely to have a skill-biased nature for DCs. As argued by Robbins (1996) in the 'skill-enhancing-trade' hypothesis, trade may end up having a skill-enhancing effect (see also Keller 2001, and Hoeckman and Javoricik 2006).

Another channel for technological upgrading is exports. DCs firms can acquire knowledge of international best practice upon entering foreign markets (Clerides et al. 1998; Epifani 2003), and sometimes higher quality standards are explicitly fixed for export. Both changes demand a more qualified workforce (see Fajnzylber and Fernandes 2004; Verhoogen 2007).

FDI are also an important channel for international technology diffusion. FDI may effect a direct spill-over of technology from multinational enterprises to local producers (Hymer 1976). FDI may be carried out for very different purposes. They may be used for seeking new markets where to sell products (horizontal FDI). This presumes that the local workforce is highly qualified to be employed in technologically advanced production processes. This makes the possibility of a rise in the skill premium as an effect of FDI more likely. Another reason for a firm to invest abroad is to exploit cheaper inputs (vertical FDI). In this case, the impact on the skill premium may be either positive or negative, depending on whether foreign firms stimulate the demand of skilled or unskilled labour. FDI have often been linked to the exploitation of natural resources in the case of Post-Soviet Union TE. Although some case studies argue that this will lead to increased wage inequality (Mynbaev et al. 2006), there exist some grounds to believe this may not always be the case (Lee and Vivarelli 2006). Finally, FDI may be conducted with the purpose of achieving agglomeration economies of scale (efficiency-seeking FDI). Foreign investors may be attracted by countries with solid institutions and stable macroeconomic conditions to safeguard the returns from their investment. They will also take into account a country's absorptive capacity and the possibility of establishing partnerships with local firms for inputs supply. This is likely to lead to territorially-localised patterns of investment. Campos and Kinoshita (2003) indeed find different purposes for FDI in the two set of TE examined here, with FDI in NMS being predominantly of the horizontal and agglomeration type, whereas vertical FDI was the sole purpose of FDI in CIS. Table 3 reports the results of a series of regressions testing the differential effects of globalisation in the two groups of countries. For each variable we show the results for two different specifications that either include or do not include the year trend (see Section 2.1). For each variable Z, we show the impact for each country group and we report the difference between the two coefficients and its significance value. The latter is defined in the variable labelled Z CIS&SEE × NMS, where Z = {EXPORTS, IMPORTS, FDI}.

Table 3. Analysis of relationship between globalization factors and inequality.

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
			Gini index			
GDP PER CAPITA	−0.0497	−0.150**	−0.0629	−0.175**	−0.110*	−0.308***
	(0.072)	(0.074)	(0.076)	(0.080)	(0.061)	(0.067)
INFLATION	−0.0245***	0.00729	−0.0231***	0.00966	−0.0162**	−0.00343
	(0.0056)	(0.0066)	(0.0058)	(0.0066)	(0.0063)	(0.0065)
EXPORTS CIS&SEE	0.133***	0.0543				
	(0.040)	(0.049)				
EXPORTS NMS	0.0976	0.04				
	(0.083)	(0.061)				
EXPORTS CIS&SEE × NMS	−0.0352	−0.0143				
	(0.091)	(0.078)				
IMPORTS CIS&SEE			0.0764	0.000485		
			(0.056)	(0.066)		
IMPORTS NMS			0.0485	−0.0173		
			(0.075)	(0.047)		
IMPORTS CIS&SEE × NMS			−0.0280	−0.0178		
			(0.093)	(0.076)		
FDI CIS&SEE					0.00823	−0.00705
					(0.0086)	(0.0084)
FDI NMS					0.062***	0.0339***
					(0.018)	(0.015)
FDI CIS&SEE × NMS					0.0537***	0.0409**
					(0.019)	(0.017)
YEAR		0.0228***		0.0251***		0.0210***
		(0.0045)		(0.0049)		(0.0040)

Table 3. (*Continued*).

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
			Gini index			
Constant	3.987***	−40.70***	4.127***	−44.81***	4.763***	−35.51***
	(0.60)	(8.75)	(0.67)	(9.30)	(0.51)	(7.73)
Observations	161	161	161	161	128	128
Number of countries	20	20	20	20	18	18
R^2 Adjusted	0.792	0.833	0.779	0.831	0.864	0.885

Notes: Robust standard errors are reported under the coefficient estimates. *: *p*-value<0.1; **: *p*-value<0.05; ***: *p*-value<0.01. All variables (apart from YEAR) are expressed in natural logarithms. All variables apart from GDP PER CAPITA, INFLATION, and YEAR, are lagged of one period.

The signs of the coefficients for the globalisation variables are positive in almost all of the specifications, thus contradicting the HO model's predictions. Exports show a strongly significant inequality-enhancing effect for the CIS&SEE. The correlation is positive in the NMS, too, though it lies outside the range of significance. However, the impact of Export is not significantly different in the two groups (see Table 3, column 1). Moreover, when the year trend is introduced, Export loses its explanatory power even for CIS&SEE (see Table 3, column 2). Imports do now show any effect in either group of countries (see Table 3, columns 3 and 4). Therefore, the skill-enhancing trade hypothesis does not receive much support from this analysis. This may be the result of aggregating across sectors where the influence has been the opposite, or a consequence of the relatively high level of skills in the workforce, so that technology diffusion did not cause a particularly strong rise in the skill premium. In either case, a more disaggregated analysis would be necessary.

On the contrary, a strong effect on inequality seems to occur for FDI. This variable shows a strongly significant effect in NMS, but no effect in the CIS&SEE. The effect is strongly different in the two groups (see Table 3, column 5), and is also robust to the introduction of the year trend (see Table 3, column 6). The result is consistent with the evidence presented above of a differential purpose of FDI in the two groups of countries (Campos and Kinoshita 2003). Foreign firms are likely to have concentrated their investments in technology-intensive sectors in NMS, and in unskilled-intensive sectors in CIS&SEE, thus bringing about a rise of the skill premium only in the former group. This supports the view that NMS have benefited from globalisation in terms of technological upgrading. Conversely, FDI in CIS&SEE have been carried out predominantly in low-technology sectors related to the exploitation of raw materials and natural resources, where no technological upgrading has been realised. The fact that a variable measuring the share of trade occurring in energy sectors does not show a significant inequality-enhancing effect in CIS&SEE (analysis not reported) further confirms this interpretation.

Finally, both GDP and INFLATION are either insignificant or show a negative sign. This is not surprising for GDP. A higher level of economic development may be associated with a stronger governance effectiveness, which should result in a better management of the negative consequences of the transition on inequality. The sign of INFLATION is instead surprising, because it was thought this variable would control for periods of macroeconomic instability. It is possible that the level of GDP already controls for this factor, so that INFLATION only measures the extent of expansive policies from the government.

3.2.   *Direction of trade and inequality*

Trade liberalisation efforts and commercial agreements, especially with the EU, resulted in a significant increase of trade flows in the region over the last decade. It is then interesting to investigate whether this had a specific inequality-increasing effect. Table 4 shows that this appears to be the case for NMS but not for CIS&SEE with respect to exports (see Table 4, columns 1 and 2). The difference between the two groups is strongly significant and the result is robust to the introduction of the year trend. The same result holds for Imports (see Table 4, columns 3 and 4). This time, the sign of the coefficient is negative for CIS&SEE, albeit largely insignificant. This supports the validity of the skill-enhancing trade hypothesis (see Section 3.1) for NMS with respect to trading with the EU. Even in this case, this is consistent with the view

Table 4.   Analysis of relationship between trade composition and inequality.

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
			Gini index			
GDP PER CAPITA	−0.133	−0.183*	−0.161*	−0.252**	−0.164	−0.181
	(0.084)	(0.11)	(0.094)	(0.12)	(0.11)	(0.11)
INFLATION	−0.00458	0.00291	−0.0148**	0.00175	0.00306	0.00260
	(0.0065)	(0.0073)	(0.0073)	(0.0082)	(0.0081)	(0.0086)
EXPORT EU CIS&SEE	0.0394	0.0166				
	(0.025)	(0.027)				
EXPORT EU NMS	0.214***	0.166***				
	(0.048)	(0.047)				
EXPORT EU CIS&SEE × NMS	0.175***	0.149***				
	(0.054)	(0.053)				
IMPORT EU CIS&SEE			−0.0133	−0.0364		
			(0.022)	(0.024)		
IMPORT EU NMS			0.154***	0.0899**		
			(0.048)	(0.038)		
IMPORT EU CIS&SEE × NMS			0.168***	0.126***		
			(0.052)	(0.044)		
EXPORT EU/US CIS&SEE					−0.0139	
					(0.027)	
EXPORT EU/US NMS					0.189***	
					(0.057)	
EXPORT EU/US CIS&SEE × NMS					0.203***	
					(0.065)	
IMPORT EU/US CIS&SEE						−0.0296
						(0.021)

Table 4.   (*Continued*).

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
			Gini index			
IMPORT EU/US NMS						0.156***
						(0.054)
IMPORT EU/US CIS&SEE × NMS						0.186***
						(0.058)
YEAR		0.0102*		0.0189***	0.0165***	0.0195***
		(0.0052)		(0.0051)	(0.0053)	(0.0051)
Constant	4.858***	−15.07	5.210***	−31.83***	−27.85***	−33.74***
	(0.71)	(9.92)	(0.77)	(9.59)	(10.1)	(9.64)
Observations	139	139	139	139	133	133
Number of countries	19	19	19	19	18	18
R² adjusted	0.856	0.860	0.834	0.854	0.855	0.859

Notes: See Table 3.

that the mechanisms associated with international technological flows and quality upgrading (see Section 3.1) occurred for NMS but not in CIS&SEE.

We have also sought to ascertain whether this result is due to trading with the EU as such, or to trading with a country at a higher level of technological development. This hypothesis is motivated by recent empirical findings by Meschi and Vivarelli (2009) that analysed the impact of trade openness on income distribution in a panel of developing countries and found that only trade with more advanced countries has a significant inequality-enhancing effect, possibly due to technological transfer and skill-enhancing trade. For this purpose we have constructed an index given by the ratio between trade with the EU and that with the US. The US is comparable to the EU in terms of level of development and technological advancement, so this index captures the specificity of trading with the EU in relation to a similarly advanced country. We report the results for the specification including the year trend (Table 4, columns 5 and 6). The index has a significant positive influence on inequality in NMS for both Exports and Imports, whereas it has no significant effect in CIS&SEE. The difference across groups is statistically significant at the 1% level.

This result indicates a specific inequality-enhancing effect of trading with the EU, which only holds for NMS. This may be due to the fact that the regulations imposed by the EU in terms of commodities characteristics and production processes, which applied in particular to NMS, forced these countries to skill-intensive technology innovations that had an inequality-enhancing effect. Likewise, NMS may have been prompted to import capital machinery from the EU in order to fulfil this requirement, which might account for the positive impact of imports from the EU on inequality. Trade with DCs did not instead have significant effects on inequality in either group (analysis not reported).

3.3.   *Inequality and internal reforms*

Other reforms are likely to have played a significant part in the upward trend in inequality. The liberalisation of labour markets in most TE caused wages to be set according to private bargaining, thus linking wages to education and productivity and thus widening wage dispersion (e.g. Rutkowski 1996; Sorm and Terrell 2000; Delteil et al. 2004). Moreover, privatisation created non-wage incomes associated with self employment and entrepreneurial activities, thus contributing to increased incomes dispersion. Price liberalisation also played a major role. Prices jumped up dramatically after the reform, sometimes by factors of two or three (Flemming and Micklewright 2000), and thus decreased the real value of incomes fixed in nominal terms. Most of the times these were concentrated in the poorest strata of the population (Mitra and Yemstov 2006). More generally, price liberalisation is likely to be associated with the diffusion of free-market-oriented practices in production, thus measuring the overall magnitude of the liberalisation process in product markets.

Institutions can also be an important factor in mediating the impact of all these factors on inequality. Boeri and Terrell (2002) emphasise the role of labour markets institutions in determining different distributive outcomes in NMS and CIS. In NMS the explosion of wage inequality has been, in fact, mitigated by institutions imposing wage floors. This has implied in NMS a greater employment rather than wage adjustment compared with the CIS, where labour market adjustments occurred instead through price rather than quantity. Cornia and Kiiski (2001) also point to the

institutional weakness and the lower quality of the policies introduced in accounting for the steeper rise in inequality in CIS.

BGM show that internal reforms are generally more important than globalisation factors in accounting for inequality in the whole sample of countries. Table 5 examines whether there have been differential effects in the two groups. We first examine the Private Share of Value Added (PSVA), which measures the share of value added that is produced by the private sector vis-à-vis the public sector. It is a general indicator of the extent of privatisation reforms. PSVA shows significantly positive effects in both groups, with no significant differences between them (Table 5, column 1). However, the coefficient is greater in the NMS, and in fact the relationship remains strongly significant only for this group once the year trend is introduced (Table 5, column 2). Price Liberalisation (PL) has been found as the factor having the strongest and most robust correlation with inequality in BGM. Even in this case, we find strongly significant and positive effects for both groups, with no differential effects – although the coefficient is greater for CIS&SEE countries (Table 5, column 3, 4). We then analyze the effect of Small Scale Privatisation (SSP). This is strongly significant and positive in both groups of countries in the specification without year trend (Table 5, column 5), but remains strongly significant only for NMS when the year trend is introduced. However, the difference in the coefficients is not large enough to pass the test of statistical significance at conventional levels (Table 5, column 6). What was found for SSP also holds for most of the other reform variables measured by the EBRD (not reported).

The evidence reviewed thus far fails to show a stronger relationship of inequality vis-à-vis a certain variable for CIS&SEE than for NMS. This is surprising because the descriptive evidence clearly shows that inequality increased more in the former group of countries. One would thus expect to find some factors that are more significantly related to CIS&SEE than NMS. Obvious candidates in this respect are those institutional factors that may have affected the general capacity of the states to manage the transition.

However, most of the indicators of institutional capacity that we have used in regression analysis – such as GE and Corruption Control – do not prove to be statistically correlated with inequality in the present econometric model (analysis not reported). The one institutional indicator for which we find evidence of a significant effect is that of a state's V&A. This indicator measures 'the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media' (Kaufmann et al. 2007, 3). So, V&A measures mostly a country's institutional capacity with respect to the citizens' ability of participating in the democratic process, rather than the government capacity in the economic sphere. V&A has a significantly negative effect in the CIS&SEE and no effects in NMS (Table 5, column 7). The negative, sign entails that the higher the V&A in a CIS&SEE country, the lower the level of inequality. However, this finding is not robust to the introduction of the year term (Table 5, column 8).

The fact that the present econometric model does not find strong evidence of the relevance of institutional capacity in accounting for inequality means that changes in institutional capacity did not correlate with changes in inequality within a country (see section 2.1). This may be either due to the fact that such indicators varied too little within each country to discern appreciable effects. Also, the paucity of observations[14] for these variables severely limits the power of statistical tests. Most importantly, the

Table 5.   Analysis of relationship between internal reforms and inequality.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
GDP PER CAPITA	0.0321	−0.0627	0.0938	−0.0171	0.0531	−0.0806	−0.0243	−0.318**	−0.1902***	−.0038254	0.0274
	(0.069)	(0.097)	(0.066)	(0.073)	(0.076)	(0.092)	(0.064)	(0.13)	(0.023)	(0.0100)	(0.0115)
INFLATION	0.00816	0.0131*	−0.00882	0.0134**	0.00742	0.0148*	−0.0106	−0.00360	−0.0032		
	(0.0070)	(0.0072)	(0.0056)	(0.0062)	(0.0077)	(0.0079)	(0.0072)	(0.0073)	(0.0086)		
PSVA CIS&SEE	0.152***	0.0897*									
	(0.031)	(0.049)									
PSVA NMS	02119***	0.1521***									
	(0.028)	(0.039)									
PSVA × NMS	0.0600	0.0624									
	(0.041)	(0.041)									
PRICE LIB CIS&SEE			0.120***	0.0744***							
			(0.027)	(0.023)							
PRICE LIB NMS			0.1078***	0.0681***							
			(0.031)	(0.024)							
PRICE LIB CIS&SEE × NMS			−0.0126	−0.0063							
			(−0.038)	(−0.03)							
SS PRIV. CIS&SEE					0.114***	0.0527					
					(0.033)	(0.040)					
SS PRIV. NMS					0.1058***	0.0672***					
					(0.018)	(0.018)					
SS PRIV. CIS&SEE × NMS					−0.0079	0.0144					
					(−0.034)	(−0.035)					

Table 5.   (*Continued*).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
VOICE & ACC.							-0.139**	-0.0791			
							(0.060)	(0.060)			
VOICE ACC. NMS							0.1548	0.0551			
							(0.13)	(0.076)			
VOICE & ACC. CIS&SEE × NMS							0.294**	0.134			
							(0.14)	(0.098)			
GOVERNMENT EFFICIENCY (MEAN)									0.0061	-0.1302***	-0.0948***
									(0.030)	(0.0252)	(0.0247)
YEAR		0.0118*		0.0205***		0.0161***		0.0188***			0.0245***
		(0.0062)		(0.0035)		(0.0049)		(0.0064)			(0.0053)
Constant	2.951***	-19.55*	2.691***	-37.25***	2.996***	-27.88***	3.984***	-31.29**	5.20***		-45.45***
	(0.67)	(11.8)	(0.62)	(6.74)	(0.74)	(9.18)	(0.51)	(11.8)	(0.201)		(10.6)
Observations	167	167	167	167	167	167	87	87	167	175	175
Number of countries	20	20	20	20	20	20	18	18	20	21	21
R^2 Adjusted	0.835	0.839	0.805	0.844	0.826	0.838	0.942	0.953	0.3512	0.1450	0.2323

Notes: See Table 3. Model used for regressions in columns 9, 10, is OLS with robust standard errors.

indicators are only available for years after 1996, so the periods for which inequality rises were largest (see Figure 4) are in fact left out of the analysis.

However, given the dominance of the time-series dimension in the present econometric model, these results do not preclude the possibility that institutional capacity may have mattered across countries. In fact, only Albania of the CIS & SEE group existed as an independent state prior to the transition. Many of these states have been subject to periods of armed conflict, which delayed and derailed their transitions. The institutional vacuum in which these countries have been left at the start of the transition is likely to have produced enduring effects.[15] In contrast, the NMS countries that were subject to state dissolution (Slovenia, the Czech and Slovak republics, and the Baltic states) were also the three most developed countries in the region according to GDP per head. This presumably provided some buffering from the effects of transition. The hypothesis that countries with well-functioning institutions would have been more capable of tackling inequality effectively appears worth examining.

To test this hypothesis we have considered the average value of the GE indicator over time, and used this variable in an Ordinary Least Square (OLS) model. Because this model drops country effects, it can capture the cross-section dimension in our data. The first specification includes GDP and Inflation as basic controls (Table 5, column 9). However, the mean GE does not turn out to be significant. This may be due to a collinearity problem with GDP, as the two variables have a correlation of about 80%. Dropping GDP from the model results in mean GE being strongly significant in predicting the Gini index, even when the year term is introduced (Table 5, columns 9–10). The sign is negative, which confirms the idea that countries with better institutional capacity generally experienced lower levels of inequality.

4.   Conclusions and analysis of the current global economic crisis

Although the nature of our dataset prevents us from finding neat causal relationships, the general picture that emerges from our analysis is one of a better – or least worse – economic performance in NMS in terms of capacity of controlling inequality. The analysis of the impact of economic openness reveals that FDI and trade flows with the EU had a bigger inequality-enhancing effect in NMS than in CIS&SEE. We interpret this as evidence of technological catching-up and productivity improvements driven by structural change taking place in the former group, but not in the latter. This clearly hampered growth prospects in CIS&SEE, where openness was mainly oriented to exploitation of natural resources. We do not find significantly different effects of other specific reforms in the two groups, such as privatisation and price liberalisation. The effects were similarly strong in both groups.

Our attention has then turned to institutional variables. We do not find strong and consistent effects of the indicators of institutional capacity using the within-country perspective of our basic econometric model. The only variable for which some effects can be detected is the V&A indicator. Interestingly enough, these effects are only present in CIS&SEE. If we modify the econometric model to allow us to examine the between-country perspective, we do find strong and consistent effects of the average level of the GE indicator over time, but only when GDP is not included in the model. Given the extremely high correlation between GDP and institutional capacity we cannot fully separate out the two effects. Nevertheless, the analysis suggests that countries with better government effectiveness, or higher financial resources at their disposal, were better able to tackle the rise in inequality.

At the time of writing, the world is affected by a sweeping economic crisis whose long-term consequences are still extremely uncertain. The crisis originated in the financial and banking sector but its effects are spreading to the real economy. Predicting how TE will respond to this crisis is clearly extremely difficult. Partly because of the TE's still relatively unexpanded financial sector (Lane 2007; EBRD 2007), a number of TE are significantly exposed to financial disruption owing to a reliance on the international capital markets to fund fiscal deficits and also private credit, particularly mortgage lending. These are mainly NMS, but other CIS&SEE, such as Russia, Ukraine, and also Belarus and Kazakhstan – are affected. Credit to the private sector has been rising rapidly in recent years in many TEs, and in recent months house prices have fallen precipitously. An additional complication is that many of these loans are denominated in foreign currency, and depreciation of the domestic currency is causing much household hardship (e.g. in Hungary). But avoidance of currency devaluation greatly constrains policy in the Baltic states. Some West European banks are highly exposed to loans in TE, and this provides a channel for contagion, particularly if the western banks choose not to support their TE subsidiaries.

The severe recession that has followed the bank crisis has further harmed the TE. Demand from the EU for manufactured goods has fallen; the prices of energy and raw materials have fallen; and similarly for the price of basic intermediate inputs (such as steel). These impinge upon a broad range of countries: from NMS to Russia and Ukraine. Even Belarus, despite being much less internationally integrated, struggles as Russia reduces energy subsidies. Not surprisingly, wages and employment are falling across the region. Some of the Central Asian CIS are less affected owing to lower globalisation with regard to trade and finance. However, for these countries, remittances from migrant workers are a significant source of income. Although remittances are usually resilient to downturns, that may not apply in this case.

How this will impact on inequality will depend upon the willingness and capability of countries' institutions to regulate inequality.[16] As shown in Figure 4, the greatest increases in the Gini coefficients occurred during the crisis of the early 1990s. It is hard to imagine that recession will not again raise inequality. The institutional weaknesses, or institutional vacuum in the early years of transition, that lead to the worse performance of the CIS countries to some degree must have been specific to that time, for reasons such as the need to establish fiscal and monetary authorities at a time when there were no longer subsidies from the Soviet budget and pricing. If this is the case, the Gini coefficients in the CIS may not rise much further in the current crisis, despite there being little improvement in institutions according to the GE index.

The problems may turn out to be more acute in the NMS. Borrowing from international capital markets may have been used to avoid essential fiscal reforms. Reduced access to such funding could force severe cuts in public spending, as has already been the case in Latvia. Budget deficits in the NMS are 'officially' constrained by the EU's stability and growth pact.[17] Although the EU will be less strict in applying this rule, countries keen to adopt the euro will try to limit their deficits. Conflict may then arise between the need to regulate inequality to comply with EU social policy and the need to restrict government borrowing. Unlike in the 1990s, Western Europe will be less able and willing to assist.

Many countries have in recent years introduced flat rate taxes,[18] typically at low rates. The high growth rates and capital inflows prior to 2008 reduced the strains imposed on the social safety net by these arrangements. In an environment of low growth and limited capital flows these fiscal arrangements are unlikely to provide

adequate automatic stabilisers. Major changes in the fiscal system are likely to be required if these countries are to avoid significant worsening of inequality.

More generally, the current global crisis may radically change the picture that has emerged thus far – namely, that countries having a greater regulation of their economy, or more financial resources to do so, are better able to alleviate the negative consequences of the transition to a market economy system. The main question for NMS is whether what thus far has appeared as greater institutional capacity has actually been the product of excessive financial dependence from richer countries, with the consequence of making these countries more vulnerable in periods of economic turmoil and less independent in terms of economic policies. On the other hand, CIS&SEE also do not appear to be immune from the crisis, which suggests that they may still suffer from lack of institutional capacity or of resources to deal with it. What seems more and more clear is nonetheless that in the future the degree of a country's financial stability should become a key variable to assess the governance capacity of economic institutions.

Acknowledgements

Notes

1. NMS are formed by the eight countries that joined the EU in January 2004 (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia) and the two countries that acceded to the EU in January 2007 (Bulgaria and Romania).
2. The following countries are part of the CIS: Armenia, Azerbaijan, Belarus, Georgia, Kyrgyzstan, Moldova, Russian Federation, Ukraine, Kazakhstan, Tajikistan, Turkmenistan, and Uzbekistan. Our dataset only covers the first eight countries in this list. The omission of the latter countries is particularly unfortunate given their characterisation as either statist economies or resource-rich countries. This prevents our econometric analysis from being conducted over more than two groups.
3. SEE include Croatia, Macedonia, and Serbia and Montenegro.
4. The Gini coefficient is a measure of inequality of income distribution. The coefficient varies between 0, which reflects complete equality and 1, which indicates complete inequality (one person has all the income or consumption, all others have none). Graphically, the Gini coefficient can be represented by the area between the Lorenz curve (that maps the cumulative income share on the vertical axis against the distribution of the population on the horizontal axis) and the line of equality (that represents the case where all individuals have the same income). The Gini index is the Gini coefficient expressed as a percentage.
5. In particular Serbia and Montenegro stand out as the country where GDP growth has been the highest across the whole TEs, and Albania is not too far behind. However, these two observations have to be taken with particular caution given the war spell that these countries experienced. In fact, Popov (2006) shows that a dummy variable identifying countries that have gone into war in the period is highly significant and has a positive sign in predicting GDP growth for the second half of the 1990s. He argues that aid received by these countries played a significant role, in addition to the lower base GDP level at the beginning of the period.
6. The pattern observed in Figure 2 may be radically changed by the global financial crisis currently affecting world economies. According to IMF predictions, in 2009 GDP in Latvia

is going to drop by 15%, Estonia and Latvia are going to experience slumps around 10%, whereas the slump is expected to be less pronounced in Russia and Ukraine – around 6%.

7. See http://www.eurofound.europa.eu/areas/qualityoflife/eurlife/index.php?template=3& radioindic=158&idDomain=3. This estimate refers to the 15 countries that were part of the EU as of 1995.

8. The temporal length of the database spans the period from 1990 through 2002. For most countries, however, it has been impossible to gather a complete time series of data over the whole of this period.

9. Barro (2000) finds some evidence in support of the Kuznets hypothesis in a sample of countries including both developed and developing economies. Sukiassyan (2007) finds a strong negative effect of inequality on growth in a sample of TE, but, as reported in the text, no evidence in support of non-linearities.

10. The appropriateness of the use of this estimator is confirmed by the fact that F tests on the joint significance of the country dummies always reject the null hypothesis that all the country dummies are zero.

11. The test has been implemented in Stata using the xtfisher command developed by Scott Merryman.

12. The WIID is the World Income Inequality Database, developed by the WIDER (the World Institute for Development Economic Research, based at United Nation University in Helsinki).

13. The exceptions are Serbia and Montenegro and Macedonia, where the Gini indexes have been measured respectively over gross disposable income and net labour earnings.

14. The sample size is nearly halved for these regressions, even after having filled missing values with the linear interpolation for all cases of a gap of no more than three years.

15. Stiglitz (2002) refers to the erosion of social capital as a significant factor in the rise of the Gini coefficient in Russia.

16. In May 2009 the World Bank predicts a 5% rise in the number classed as living in poverty or vulnerable to poverty in the Europe and Central Asia region by the end of 2009 (overview of Europe and Central Asia).

17. Slovenia and the Slovak Republic as members of the Eurozone cannot ease monetary policy.

18. The first was Estonia in 1994, followed by Latvia and Lithuania. Since 2001 the list extends to Russia, Georgia, Ukraine, Serbia, Macedonia, Poland, Romania, Slovak Republic and Slovenia.

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